



BEEKEEPING BASICS - PESTS AND DISEASES

Wax moth

Wax moths can play a beneficial role in the environment, but can also cause significant damage to managed colonies and stored equipment.



Background

There are two species of wax moth that can infest a honey bee hive — the greater wax moth (*Galleria mellonella*), and the lesser wax moth (*Achroia grisella*). Both species eat beeswax, pollen, larval silks, and honey bee debris and can cause significant damage in both active hives and stored equipment.



Distribution

Wax moths can be found worldwide, but they are a particular problem in the tropics and subtropics. Wax moths cannot survive freezing temperatures.



Physical description of pest

The adult Greater wax moth is small, grey and about 13-19 mm long. There is some mottling on its wings, and the hind third of the wing is bronze coloured. The Lesser wax moth has similar colouration but is only 10-13 mm long. The larvae of both species have a dark head with several body segments. They are initially white in colour and turn to grey as they grow.

How it affects the hive

A small number of larvae in a strong hive is not much of a problem. Weaker hives are at a greater risk. Wax moths will usually take advantage of already diseased or declining honey bee colonies and an infestation can be an indication of some other underlying problem(s) with the colony.

A wax moth infestation can destroy combs and honey, as well as spread pathogens. In serious cases, they can cause the death of a colony.

How it spreads, symptoms & detection

In many cases, wax moths are spread among colonies through unmonitored honeycomb storage. The moths will typically prefer infesting stored combs that are not actively populated by bees. When keepers transport these combs between colonies, they can accidentally spread larvae to other hives.

Additionally, dark or unmonitored hives can quickly lead to an infestation situation. The moths prefer darker areas, so hives without regular access to sunlight tend to be more susceptible. All it takes is one moth to enter a hive, lay eggs and hatch larvae to infiltrate a colony. As these hatchlings consume comb and grow, they will quickly increase in number.



Eggs are difficult to detect, and larvae are usually spotted first. Wax moth larvae are sometimes confused for small hive beetle larvae. Wax moth larvae are larger and softer than small hive beetle larvae, and have pairs of prolegs all along their bodies. Webbing and cocoons on the frames are signs of wax moth infestation.

Prevention, treatment & control

Like many other diseases, parasites and infestations, preventing wax moths often boils down to maintaining a strong, healthy colony. Healthy colonies with large honey bee populations can naturally identify and eject wax moth larvae themselves. By keeping the hive robust, beekeepers can potentially avoid an infestation like this altogether.

Strong colonies also directly connect with responsible, sanitary apiary husbandry. Beekeepers must maintain a strict level of control regarding equipment, hives and related items. This also holds true for untreated wax, old combs and similar hive components. Maintaining a clean environment can always help to prevent the direct infestation (and ongoing spread) of this pest.

MANUAL REMOVAL OF LARVAE

In minor infestations, manual identification of moth larvae in hives is the simplest method to eliminate them. Beekeepers can identify the larvae which typically present in frames (with webbing and other signs often visible). Directly finding and removing these larvae can fully eliminate the threat of continued infestation.

Once an infestation occurs, moths can generally be identified in both living colonies as well as stored combs. In most cases, stored combs carry a greater risk of infestation. And this infestation can render comb and honey unusable and inappropriate for sale.

CREATING AN OUT-OF-THE-HIVE MOTH TRAP

A large amount of anecdotal evidence showcases various methods to eradicate wax moths from the hive.

One example is to take a 2-litre soft drink bottle with the cap on and drill a small hole (about 2.5 cm) near the slope of the bottle neck. From there, the bottle should be filled with 1 cup each of water and sugar, ½ cup of vinegar and a banana peel.

After this formula ferments (usually in 1-2 days), the bottle should be tied to a nearby tree or other item to draw moths into the trap. Over time the moths will enter the bottle trap and eventually drown.

CLEANING INFESTED COMB

Infested frames can be cleaned for re-use provided there is no sign of brood disease. Remove damaged comb and wax moth debris. This should be double-bagged and binned, or burned if possible. Comb that has not been damaged in the infestation can be removed and melted down for wax. If the comb is not melted immediately, it should be frozen for 24 hours to kill wax moth larvae and eggs before storing. Frames should be scraped down and frozen for 24 hours before storage or re-use.

CORRECT EQUIPMENT STORAGE

When storing brood frames or Flow Frames, place them in a freezer for 24 hours before storage. Store them in moth-proof material, such as polystyrene, plastic tubs or strong plastic bags that are well sealed. Wax moths will only settle and lay eggs in dark locations, so stacking boxes with sticks in between them to let in light can help prevent this. However the stored equipment must be bee-proof, and small hive beetles need to be monitored.

Sources

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